Amendments to the Specification

Please amend **page 4**, second and third full paragraphs as follows:

The frequency modulated (FM) pulse source is comprised of a dispersive element 30, such as a chirped fiber Bragg grating (FBG), a circulator 20, and a tunable laser, such as a distributed Bragg reflector (DBR) 10 semiconductor laser diode. The injection current of the laser's DBR mirror section is modulated, causing the lasing frequency to also be modulated. The gain section of the laser is pumped by current supply 16, which supplies a DC current I_{DC}.

~~Group velocity dispersion (GVD), which causes frequency dependent temporal delay, is applied to the output of the laser,~~ The dispersive element 30 applies group velocity dispersion (GVD) to the optical source output and converts the frequency modulation to amplitude modulation. ~~A frequency synthesizer 12 inputs into a bias tee 14.~~ The different instantaneous frequencies experience different temporal delays and thus bunch together. When the dispersion and modulation depth are optimized, short pulses are formed.

Please amend **page 5**, first full paragraph, as follows:

A bias current from a DC ~~power~~ current supply 16 is applied to keep the laser above the lasing threshold at all times. ~~Power~~ Current supplies suitable for this purpose include laser diode drivers of the type available from Newport, Inc. (Irving, CA) as Model 5005 Laser Diode Driver. A 0.5 GHz current signal supplied by the frequency synthesizer 12 (model number HP 83712B, available from Hewlett Packard Co., Palo Alto) was applied to the mirror section of the DBR, via a bias tee 14. The current modulated the center wavelength of the DBR reflector due to carrier induced index changes. The modulation frequency is arbitrary, as long as it is much lower than the cavity's fundamental resonance. The laser gain bias was 66 mA and the mirror section bias was 11.75 mA. The mirror bias current, supplied by bias source 15, and modulation current were combined in the bias tee 14 from Picosecond Pulse Labs, Boulder CO. The resulting optical signal was frequency modulated with a modulation index of 52.5, defined as

$$m = \Delta f / f_m \qquad (1)$$

where the total sweep range $2\Delta f$ is 50 GHz, corresponding to 0.4 nm at 1553 nm, and wherein f_m is the modulation frequency 0.5 GHz. With higher modulation current, the bandwidth can be as wide as 0.76 nm, generating an index m of 95.